BODY OF VEHICLE

CROSS-REFERENCE

[0001] This application claims priority to Japanese Patent Application No. 2019-176105 filed on Sep. 26, 2019, the contents of which are hereby incorporated by reference into the present application.

TECHNICAL FIELD

[0002] The technique disclosed herein relates to a body of a vehicle. It should be noted that in the present disclosure, the vehicle includes gasoline vehicles, electric vehicles, hybrid vehicles, fuel cell vehicles, etc.

BACKGROUND

[0003] Japanese Patent Application Publication No. 2019-038482 describes a body of a vehicle. This body includes a floor panel (a front floor panel and a rear floor panel) constituting a cabin floor and a rear crossmember protruding downward from the floor panel. A battery case is disposed below the floor panel. The battery case houses a battery configured to supply electric power to a traction motor. The battery case is located frontward of the rear crossmember.

SUMMARY

[0004] In the body of Japanese Patent Application Publication No. 2019-038482, a boundary (joint site) between the front floor panel and the rear floor panel is located frontward of the rear crossmember. The battery case is located frontward of the boundary. The body further includes an underfloor plate that connects a bottom surface of the battery case and a bottom surface of the rear floor panel. This underfloor plate is considered to prevent water from entering the vehicle from the boundary. However, there is room for improvement as a water blocking structure.

[0005] A body of a vehicle disclosed herein may comprise a floor panel, a pair of rockers, an indoor floor crossmember, an outdoor floor crossmember, and a unit component. The floor panel may comprise a panel consisting of a single plate. The pair of rockers may extend along both of side edges of the floor panel, respectively. The indoor floor crossmember may protrude upward from the floor panel and connect the rockers to each other. The outdoor floor crossmember may protrude downward from the floor panel, connect the rockers to each other, and be located rearward of the indoor floor crossmember. The unit component may be located below the floor panel. The unit component may extend from a position located frontward of the indoor floor crossmember to a position that is located rearward of the indoor floor crossmember and frontward of the outdoor floor crossmember. A portion of the floor panel that is within a range surrounded by the pair of rockers, the indoor crossmember, and the outdoor crossmember may consist of the panel.

[0006] It should be noted that the panel consisting of a single panel means that the panel is not a member in which two or more panels are joined together. Further, the unit component means a component of any type mounted on the vehicle. For example, the unit component may be a component that stores an energy source for the vehicle to run, such as a battery, a fuel tank, a hydrogen tank, etc.

[0007] In this vehicle body, the unit component extends from a position located frontward of the indoor floor crossmember to a position that is located rearward of the indoor floor crossmember and frontward of the outdoor floor crossmember. That is, a rear end of the unit component is located rearward of the indoor floor crossmember and frontward of the outdoor floor crossmember. Thus, the unit component does not cover at least a part of a range that is located rearward of the indoor floor crossmember and frontward of the outdoor floor crossmember. In the vehicle body, however, the portion of the floor panel that is within the range surrounded by the pair of rockers, the indoor crossmember, and the outdoor crossmember consists of the panel (i.e., the single plate). That is, the plate does not have any boundaries within the range. Thus, the vehicle body can effectively suppress water from entering the vehicle within the range.

[0008] The body of the vehicle disclosed herein does not intend to deny the structure described in Japanese Patent Application Publication No. 2019-038482 (i.e., underfloor plate). Such an underfloor plate may be added to the body structure disclosed herein to further improve the water blocking effect. Such an underfloor plate may not be provided in the body structure disclosed herein to reduce the weight of the body.

[0009] In the body structure disclosed herein, the panel consisting of the single plate may be provided with at least one through hole. The panel can be provided with through hole(s) for various purposes, and if the panel is provided with through hole(s), a water blocking structure can be provided to each through hole individually. Even with the panel provided with through hole(s), the water blocking effect can be brought about by the absence of boundaries (boundaries between plates) in the panel.

BRIEF DESCRIPTION OF DRAWINGS

[0010] FIG. **1** is a perspective view of a body **10** of a vehicle.

[0011] FIG. **2** is a planar view of an underbody from above.

[0012] FIG. **3** is a planar view corresponding to FIG. **2**, with reinforcements **60**, **62** omitted.

[0013] FIG. **4** is a cross-sectional view of the underbody along a line IV-IV in FIG. **2**.

[0014] FIG. **5** is a perspective view of an area around a left reinforcement **60** from obliquely above.

[0015] FIG. **6** is a cross-sectional view of the underbody along a line VI-VI in FIG. **2**.

[0016] FIG. **7** is a planar view of the underbody from below.

[0017] FIG. **8** is a cross-sectional view of the underbody along a line VIII-VIII in FIG. **2**.

[0018] FIG. **9** is a cross-sectional view of the underbody along a line IX-IX in FIG. **2** (with a battery case **70** omitted).

DETAILED DESCRIPTION

[0019] A traction motor is mounted on a vehicle of an embodiment. The vehicle travels by having the traction motor driving its wheels. FIG. **1** shows a body **10** of the vehicle of the embodiment. The body **10** includes a floor panel **20**. The embodiment to be described hereinbelow relates to a rear portion of the floor panel **20** and a surrounding structure around the rear portion. In the drawings including FIG. **1**, an arrow FR indicates a front direction of the vehicle, an arrow RH indicates a right direction of the vehicle, and an arrow UP indicates an up direction of the vehicle.